



TOPTUNG LIMITED

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Quarterly Activities and Cash Flow Statement

For the 3 months ending 31 December 2016 (Quarter)

COMPANY OVERVIEW

TopTung Limited (**TopTung**) (**Company**) (ASX: **TTW**) is a mineral exploration company listed on the Australian Securities Exchange (**ASX**).

During the quarter the Company received the necessary permits and approvals required to conduct a drilling programme and undertake associated physical activities at its Torrington Tungsten and Topaz Project. The required statutory notices and public consultations were completed for these activities to commence mid-January 2017.

In addition, outstanding success was attained with an X-ray ore sorting trial; the scoping metallurgical testwork was completed; Processing plant based on resulting flowsheet estimated to cost below A\$15 million; and, the ARC funding application in collaboration with the UNSW was lodged with the Federal Government for financial assistance for topaz research - see further detail in the Technical Activities Report below.

CAPITAL STRUCTURE AND CASH POSITION

The Company's summarised capital structure at 31 December 2016 is as follows:

Issued fully paid ordinary shares:	114,935,740
Options (listed and unlisted):	Nil
Cash at Bank:	\$4.2 million

Shareholders and potential investors should also review the Company's Annual Report and audited Financial Report for the year ending 30 June 2016 to fully appreciate the Company's financial position.

Cash balances are placed on short-term deposit and are monitored on a month to month basis in order to ensure funds are available for the commencement of drilling and associated field based activities in January 2017.

ANNUAL GENERAL MEETING

The Annual General Meeting was held on Friday 11 November at 4.00pm (AEST) at Level 8, 46 Edward Street, Brisbane. All resolutions were passed by show of hands.

TECHNICAL ACTIVITIES REPORT

TORRINGTON TUNGSTEN and TOPAZ PROJECT

Highlights

1. Outstanding results from X-ray ore sorting trial
2. Completion of the initial bulk sample metallurgical testwork and resultant processing plant cost estimation
3. Australian Research Council funding application for topaz research in collaboration with the University of New South Wales
4. Drilling company contracted for programme commencing 24 January 2017

1. X-ray ore sorting trial - breakthrough for the Project

The highlight for the quarter was the successful ore sorting testwork carried out by TOMRA Sorting Solutions. Hand selected (10 to 30mm) tungsten mineralised and unmineralised Torrington quartz-topaz host rock (known as silexite) from Mt Everard was processed through the TOMRA X-Ray Transmission (XRT) test facility in Sydney (see ASX announcement of 18 October 2016).

Summary of Results: The head grade of the sample feed was 0.78% WO₃. After passing through the plant, the sorting and separated products were:

- The mineralised product comprised 56% of the sample feed and assayed 1.38% WO₃; and,
- The unmineralised (waste) product comprised 44% of the sample and assayed 0.029% WO₃.

What this means is that approximately half of the material going through the sorter is rejected as waste, thus significantly reducing the mass to be processed further while also increasing the grade of the mineralised fraction.

This small-scale sorting testwork was not optimised, but clearly indicates that the TOMRA XRT system is capable of separating finely disseminated tungsten mineralised silexite from unmineralised samples.

To optimise this testwork, drill core that is more representative of the mineralised silexite zone and the grade of the deposit will be used to verify and quantify that significant mass reduction and high recoveries can be achieved from a full scale XRT sorter. This testwork will be undertaken in the second Quarter of 2017 after the completion of the drilling programme.

2. Metallurgical Testwork Programme

As outlined in the 2016 AGM presentation (ASX announcement of 11 November 2016) and the March Quarterly Report, metallurgical testwork undertaken by Peacocke and Simpson (Zimbabwe) on a 1.1 tonne portion of the 3 tonne silexite bulk sample collected from the Mt Everard pit late 2015 which commenced in mid-January 2016 had been finalised.

- Following the earlier phases of testwork (see ASX announcements of 27 July 2016 and 6 September 2016) on portions of the bulk sample to formalise a processing route, the remaining 720kg with an average grade of 0.36% W was then processed accordingly
- The first step was wet impact crushing to minus 1mm and screening off the -300 micron fraction
- Grading analysis on the impact crushed product showed that the -300 micron fraction contained 76% of the total tungsten in the sample in 36.5% mass yield with an assay value of 0.75% W
- Liberation and upgrade at -300 micron was not as dramatic as in the earlier investigate tests, but is still very apparent. This bulk test is probably a truer reflection, being derived from a much larger sample

Primary spiral concentration of -300 micron product:

- The calculated head grade of the -300 micron fraction was 0.75% W
- 94.9% recovery was achieved to a concentrate grading 7.61% W in 9.4% mass yield, and 97.9% recovery to combined concentrate and middlings grading 4.26% W in 17.3% mass yield
- The primary spiral tails were then recycled to check the efficiency of scavenger spiral concentration to recover the remaining 2.1% of W not recovered

Overall spiral concentration of -1,000 micron product:

- The overall recovery via rougher spiral concentration on both particle size fractions was 86.1% to concentrate grading 6.22% W in 5% mass yield
- Incorporation of middling and scavenger concentrate fractions increased recovery to 96.8% but significantly reduced grade to 1.98% W in 17.7% mass yield
- The economics of processing large volumes of low grade concentrates to achieve the very high recovery rates through High Intensity Wet Magnetic Separators (WHIMS) will need to be assessed during feasibility studies

Criteria applied for tungsten plant flowsheet:

A much simpler flowsheet compared to what was originally envisaged has resulted from:

- (a) The highly successful X-ray Transmission (XRT) ore sorting trials (see ASX announcement 18 October 2016) and,
- (b) The equally successful magnetic separation testwork on cleaning-up the gravimetric spiral and shaking table concentrates to produce a saleable product (see ASX announcement 6 September 2016)

Both of the above processes (a and b) are less proven than the bulk sample gravity separation testwork due to the small volumes of material worked on, however there is no technical reason why scaling them up will fail.

It has therefore been necessary to make certain assumptions as to how both (a) and (b) would affect the plant flowsheet, with (a) having the potential to discard approximately one third of the 10 to 30mm material fed through the XRT and therefore potentially increasing the grade of the mineralised material by an equal amount. It is also assumed that crushing to minus 30mm will result in two-thirds of the material reporting to the XRT, so the net result would be a third less material being processed to minus 1mm as feed to the gravity recovery circuit and also a 50% increase in the overall grade of the minus 1mm feed.

If proven viable, magnetic separation (b) of the spiral concentrates directly means that the originally envisaged shaking tables can be excluded altogether from the circuit.

Looking at the flowsheet (ASX announcement of 11 November 2016) the circled number 1 and 2 offtake points are the source of by-products with potential value referenced in the ASX announcement of 13 September 2016. Topaz concentrate would be collected from the Cleaner Spirals.

Budget Estimate for processing plant

Appropriate Process Technologies (APT) of South Africa, which is affiliated with Peacocke and Simpson designed the 200tph Crushing Plant followed by 60tph Scrubbing + Spirals flowsheet presented at the AGM (ASX announcement of 11 November 2016). Based on the assumptions above the plant was costed at US\$8,300,000 ex-works Johannesburg.

Excluded are civils, water and electricity supply, tailings facility, product drying and handling which the Company estimates would bring the total price to <US\$11,000,000 (<A\$15 million).

3. Australian Research Council funding application for topaz research

Background: The Company realised that the potential added value of the topaz could dramatically enhance the economic success of its Torrington tungsten and topaz project and that negotiations for collaboration with the Materials Science and Engineering faculty of the University

of New South Wales (UNSW) would be the best way forward. Contact was made with Professor Sorrell which led to an on-campus meeting with him and Dr Koshy in November 2015. Subsequently, there have been a number of on-campus meetings and agreement was reached to fund a small-scale research project to demonstrate the development of oriented mullite fibres from fly ash.

The research programme showed the potential for the fabrication of oriented mullite from fly ash; furthermore, the work showed the potential for using this material as a template for the fabrication of oriented fibres from topaz, the major by-product produced from the tungsten recovery processes. Consequently the Company registered a wholly-owned subsidiary Topfibre (Pty) Limited to lead its collaborative research with the UNSW.

Application for Australian Government's Australian Research Council (ARC) funding: An evolving Strategic Plan was agreed to by the Company and Prof. Sorrell (and Dr Koshy) to investigate the production of Single-Crystal Mullite Fibres from the Torrington Topaz leading to commercial production of Fibre-Reinforced Composites. A submission was lodged with the Grants Management Office (GMO) of the University of New South Wales (UNSW) through their Research Management System (RMS) and the application was accepted and lodged with the Federal Government as a 2016 ARC Linkage Project (LP160101569) before the cut-off date of 22 December 2016. Outcomes are typically announced approximately six months after the date of submission.

Research project duration and commitment by the Company: If this ARC Linkage Grant application succeeds the formal collaboration between the Company and the UNSW will continue, with the Company then committed to a three-year research programme with its share of funding totalling approximately \$500,000 (in cash and kind).

Justification of the financial and technical commitment by the Company: Metal matrix composites (MMCs) are established in structural, aerospace, automotive, electronic, thermal management, and wear-resistance applications*. In 2012, the market for MMCs was US\$229 billion for a volume of 5,500 tons*. The market is estimated to increase in 2019 to US\$357 billion for a volume of 8,300 tons*.

Ceramic matrix composites (CMCs) have only recently begun to emerge from niche applications, finding roles in space, military, ground transport, power generation, thermal protection, corrosion resistance, and wear resistance applications*. The market for CMCs is considerably smaller, with a current 2016 value of US\$3.9 billion and estimated 2021 value of US\$6.2 billion (these figures also include carbon matrix composites)*.

Fibres that have been commonly used to reinforce MMCs and CMCs include glass, $K_2Ti_6O_{13}$, $K_2Ti_8O_{17}$, Al_2O_3 , B, C, SiC, and Si_3N_4 *. The only commercial mullite-like fibre is polycrystalline mullite-alumina (Nextel), which is unstable $>1300^\circ C$ *. As long ago as 1986, the prices of these materials ranged from US\$5/kg for potassium titanate to US\$650/kg for silicon nitride*. One of the major disadvantages of these fibres is that they are polycrystalline and, as such, are prone to grain growth and consequent weakening during heating. To the knowledge of Prof. Sorrell, the only commercially available single-crystal fibre was alumina that was produced in the early 2000s by Sapphicon; it sold for US\$100,000/kg. The current benchmark cost for high-end non-oxide fibres tends to be in the vicinity of US\$1,000/kg.

The ultimate of these fibres has always been single-crystal mullite owing to its high melting point ($1828^\circ-1890^\circ C$ *), low coefficient of thermal expansion, low thermal conductivity, high strength, resistance to corrosion, and stability in both reducing and oxidising atmospheres*. However, such fibres are not commercially available.

The **General Aim** of the research programme is to develop the means leading to the production of commercial quantities of such individual, single-crystal, mullite fibres of dimensions suitable for implementation as reinforcements for MMCs and CMCs.

The present collaboration project builds on (1) Prof. Sorrell's prior research work on topaz from Torrington which led to the fabrication of mullite single-crystal fibres, which were completely free of residual glass, and (2) both his and Dr Koshy's prior work on the growth of mullite fibres from fly ash.

Note: Details of any reference notated by * is available on request.

4. Exploration Programme

As reported (see ASX announcement of 22 December 2016) all statutory requirements including community consultations to allow drilling and associated activities to commence in the week of 23 January 2017 have been met.

The Company has entered into an agreement with Orange (NSW) based Chief Drilling to undertake an alternating diamond and reverse circulation (RC) percussion drilling programme.

Tenterfield based Townes Contracting will re-establish existing access and logging tracks in the Torrington State Forest and on Lot 20 in the week of 16 January. These tracks will be used to provide access to drill pads with the least possible environmental disturbance.

The approved budget for direct drilling costs is \$700,000 and pending the ratio of RC to diamond, will allow for approximately 8,000m of RC and 2,500m of combined HQ and PQ diameter diamond drilling.

The drill programme will last about 3-months. Initially about 8 diamond holes will be drilled to allow for a better understanding of the geology and mineralisation.

The external laboratory to complete the chemical analyses is yet to be decided.

In addition to the direct drilling costs, the Company estimates that sample analyses, track clearing, contract geologists and field staff, accommodation, vehicles, consumables etc will cost \$400,000. The total budget estimate is therefore between \$1 and \$1.2 million.

March Quarter

The March Quarter should see the majority of resource and exploration drilling within the REF areas completed.

MINERAL TENEMENT INFORMATION

Project	Tenement. No.	% Interest	Location
Torrington 1	EL 8258	100%	New South Wales
Torrington 2	EL 8355	100%	New South Wales

WAIVER FROM LISTING RULE 7.3.2

Shareholder approval has been obtained for the issue of 6,000,000 fully paid ordinary shares ("Tranche 3 Shares") as part of the acquisition of two exploration licences in NSW known as the Torrington Project from Resolve Geo Pty Ltd ("Resolve"). This waiver has been obtained to issue the shares more than three months after approval at the meeting on 14 August 2015, on the proviso that the Company provides a note stating the terms on which this issue will occur.

The Tranche 3 Shares are to be issued 20 business days after the Company prepares:

- a final investment decision affecting the licences (as defined in the agreement); and
- applies for one or more mineral leases over the area/s of mineralisation described in the final investment decision

and in any event no later than 31 December 2017.

For, and on behalf of, the Board of Directors of TopTung Limited,

Dr Leon Pretorius
Executive Chairman
TopTung Limited
10 January 2017

For any enquiries please contact

Martin Kavanagh on 0419 429 974, or

Leon Pretorius on 0419 702 616

Competent Person Statement

The information in this announcement that relates to metallurgical testwork for the Torrington Project is being conducted under the supervision of Dr Leon Pretorius. Dr Pretorius is the Executive Chairman of TopTung Ltd and is a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM) (CP) and a Member of the Australian Institute of Geoscientists (MAIG). Dr Pretorius has sufficient experience which is relevant to the type of beneficiation plant under consideration and to the activities being undertaken. This qualifies Dr Pretorius as a “Competent Person” as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012). Dr Pretorius consents to the inclusion in this report of the matters based on the information in the form and context in which it appears. Dr Pretorius holds shares TopTung Ltd.

Appendix 5B

Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

Name of entity

TopTung Limited

ABN

12 118 788 846

Quarter ended ("current quarter")

31 December 2016

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation	(81)	(155)
(b) development	-	-
(c) production	-	-
(d) staff costs	-	-
(e) administration and corporate costs	(113)	(245)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	21	66
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Research and development refunds	-	-
1.8 Other (provide details if material)	9	20
1.9 Net cash from / (used in) operating activities	(164)	(314)

2. Cash flows from investing activities		
2.1 Payments to acquire:		
(a) property, plant and equipment	-	-
(b) tenements (see item 10)	-	-
(c) investments	-	-
(d) other non-current assets	-	-

Mining exploration entity and oil and gas exploration entity quarterly report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
2.2	Proceeds from the disposal of:		
	(a) property, plant and equipment	-	-
	(b) tenements (see item 10)	-	-
	(c) investments	-	-
	(d) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other – EL security deposit	-	(10)
2.6	Net cash from / (used in) investing activities	-	(10)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of shares	-	-
3.2	Proceeds from issue of convertible notes	-	-
3.3	Proceeds from exercise of share options	-	-
3.4	Transaction costs related to issues of shares, convertible notes or options	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	Net cash from / (used in) financing activities	-	-

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	4,398	4,558
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(164)	(314)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	(10)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	4,234	4,234

5. Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1 Bank balances	59	71
5.2 Call deposits (Term deposits with 30 day notice required to convert to cash)	4,175	4,327
5.3 Bank overdrafts	-	-
5.4 Other (provide details)	-	-
5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)	4,234	4,398

6. Payments to directors of the entity and their associates

- 6.1 Aggregate amount of payments to these parties included in item 1.2
- 6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2

Current quarter \$A'000
82
-

Amounts paid to directors include salaries, superannuation and directors' fees.

7. Payments to related entities of the entity and their associates

- 7.1 Aggregate amount of payments to these parties included in item 1.2
- 7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2

Current quarter \$A'000
-
-

N/A

Mining exploration entity and oil and gas exploration entity quarterly report

8. Financing facilities available <i>Add notes as necessary for an understanding of the position</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
8.1 Loan facilities	-	-
8.2 Credit standby arrangements	-	-
8.3 Other (please specify)	-	-
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

N/A

9. Estimated cash outflows for next quarter	\$A'000
9.1 Exploration and evaluation	(550)
9.2 Development	-
9.3 Production	-
9.4 Staff costs	-
9.5 Administration and corporate costs	(120)
9.6 Other (provide details if material)	
9.7 Total estimated cash outflows	(670)

10. Changes in tenements (items 2.1(b) and 2.2(b) above)	Tenement reference and location	Nature of interest	Interest at beginning of quarter	Interest at end of quarter
10.1 Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced	Nil			
10.2 Interests in mining tenements and petroleum tenements acquired or increased	Nil			

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.



Sign here: (Company secretary)

Date: 10 January 2017

Print name: Suzanne Yeates

Notes

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.